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**Time, Space, and Force Considerations for a Joint Force Commander's
Air Operations in a Counterinsurgency**

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Abstract

Time, Space, and Force Considerations for a Joint Force Commander's Air Operations in a Counterinsurgency

The recent addition of the counterinsurgency operations being placed on par with preparations for major combat operations ushers in a new era of military thinking and doctrine. No longer will irregular warfare or small wars be regulated to the missions that the US military “has to do, but doesn’t want to.” When a Joint Force Commander is establishing his force structure for COIN operations he will have many options in how to set up his air operations and for what purpose. The current model of the CAOC in CENTCOM does not meet the needs of the ground commander to utilize his air assets most effectively. This paper seeks to examine the tools available to the JFC seen through the lens of force, space, and time. With the proper mix of force, the correct command organization, the right allocation of forces throughout the AO, the JFC can ensure his air assets are in the right place at the right time to support his ground scheme of maneuver.

Introduction

The future Joint Force Commander (JFC) will have many challenges to face when organizing his forces and command structure. As the United States military begins to shape its force structure to conduct more operations on the lower end of the range of military operations (ROMO), particularly Counter-Insurgency (COIN), the JTF has many options when deciding how to conduct air operations in support of the ground scheme of maneuver. The current model of the Combined Air Operations Center (CAOC) running two separate theaters in Central Command (CENTCOM) is not using air power to its maximum potential for COIN operations. The COAC does not adequately integrate with the ground scheme of maneuver, does not have the command organization necessary for COIN operations, and does not use the battlespace effectively. These negative factors combine into a system that is slow to respond and does not meet the needs of the ground commander. The JFC needs to shape his aviation arm to be flexible, quick to respond, and above all the supporting arm for the ground scheme of maneuver. To overcome the current shortfalls the JFC can build a joint operational construct that ensures success by accounting for forces available, maximizing the use of space to create more flexibility, which will lead to an aviation force that is supportive of the ground scheme of maneuver during COIN operations.

Back to Our Roots

Alfred Cunningham, the Marine Corps' first aviator, stated, "The only excuse for aviation in any service is its usefulness in assisting the troops on the ground to successfully carry out their missions."¹ This is more true than ever in COIN. Air operations should be used in concert with the ground scheme of maneuver. However, large scale operations are usually thought of in sequential terms; air power being used to set conditions on a battlefield

and then ground operations will follow. The massive formations of bombers used during World War II in Germany and Japan, or the more recent heavy bombing missions during the opening phases of OIF, bring to mind the traditional way aviation is be used to degrade an enemy force before ground troops ever come in contact with it. Most of modern-day aviation training is dedicated to large-scale conflicts against a peer enemy.

After the fall of Saddam's regime the military's doctrine was not prepared for lower intensity conflicts². However, using aviation in COIN is not a post-9/11 phenomenon. The Marine Corps laid out many founding principles for fighting "small wars" in 1940 as a result of its experiences fighting insurgencies in the Caribbean during the 1920s and 1930s. Although certain types of equipment described are obsolete, the Small Wars Manual identifies many principles which are relevant for a JFC. The overarching theme is that the aviation arm during COIN operations works directly for the ground commander. The Small Wars Manual lists many mission sub-sets for the aviation arm; reconnaissance, strikes, and patrol support are a few listed. Each mission comes with a detailed description of it can best be tied to the ground units objectives.³ As a recent Tiger Team report from the USAF and the Marine Corps stated, "To be effective in irregular warfare or counter-insurgency, airpower should be tightly integrated and synchronized with ground operations."⁴

The current CAOC structure in CENTCOM does not work towards effective COIN operations. The AFMCTT stated that, "The USAF's TACS (theater air control system) structure optimized for MCO (major combat operations) is significantly challenged to fully integrate and synchronize airpower with ground forces in IW (irregular warfare)."⁵ The current structure was designed for MCO. From the Air Force's perspective the CAOC took a big picture view of what was happening in relation to large armies fighting conventional

wars; “this level of focus essentially required the CFACC (Combined Force Air Component Commander) to have a macro-view of the ground scheme of maneuver.”⁶ Although there are numerous air assets in today’s operations, they are not integrated effectively to conduct COIN operations. This type of air operation needs to be fully integrated with the ground forces movements and actions, as proposed by the Small Wars Manual.

Factor Force: The Right Mix of Forces And Shaping Command Relationships

COIN expert David Galula contends that successful COIN operations “...can be summed up in a single sentence: Build (or rebuild) a political machine from the population upward.”⁷ If Galula is right, the ground element must be the supported element. Air power cannot build political organizations or relate to people on the ground. The ground scheme will be tied closely to the commander’s objectives. These objectives can be wide ranging, from destruction of an insurgent’s location to construction of civil infrastructure within the area of operations (AO). Air operations must support what the ground scheme is trying to accomplish. Although these missions involve fewer forces, when compared to military operations of the past, the tactical outcome can have strategic results. The precision and lethality of today’s aviation platforms demands that they are fully integrated and not conducting separate missions independent of the ground forces. In February 2002, a Predator tracked and fired upon three individuals in Afghanistan who were suspected of being insurgents. All three men were killed, but none were affiliated with al-Qaeda. The Predator was conducting an independent air reconnaissance patrol, and was being operated over seven thousand miles away.⁸ A COIN JFC now has to contend with an even more hostile populace because an air operation was being conducted on its own.

The JFC must set up the best operational design to ensure his ground forces are supported across the scope of COIN operations. The JFC has many options available in terms of forces to choose from. The Small Wars Manual states, “the composition of an air force organized for small wars operations cannot be definitely prescribed, nor can its comparative strength in relation to the ground forces be determined prior to a careful estimate of the situation in each case.”⁹ The JFC needs by the right mix of aviation assets according to his operational scheme and particular situation.

The air assets that are most tied to the ground forces’ movements, missions, and doctrine are rotary-wing (RW) platforms. Both the Army and the Marines train and equip their RW for the sole purpose of supporting the ground scheme of maneuver. The RW and ground forces relationship translates well into a close bond between the ground forces and the RW in support. More often than not, due to the relatively shorter ranges associated with RW, they cover a smaller geographic area than fixed-wing aircraft (FW). This enables familiarity with the ground forces’ AO and allows for quick reaction to certain tactical scenarios, such as troops in contact (TIC). The RW familiarity with the area, close working relationship in peacetime and combat operations with the ground forces, and type of equipment and weapons are suited for COIN, and make for a winning combination. Many factors are combined to produce such tight cohesion and the end result is an intangible combat multiplier that is tough to replicate with other supporting arms. Army and Marine ground units typically favor their RW assets given the choice.¹⁰

There are limitations to having an all-RW aviation force. RW aircraft are extremely vulnerable in an urban environment.¹¹ Although attack RW carry can carry an impressive array of weapons, all of their weapons need to be supported by the aircraft or by a ground

system, thus exposing either the RW platform or the ground personnel to enemy fire. Long-range stand-off attacks are very difficult, especially in the urban environment. However, the greatest drawback of RW is their poor modern day intelligence, surveillance, and reconnaissance (ISR) capabilities. RW ISR in a traditional framework is very good. Their flight profiles lend themselves to accurate reporting, and their close proximity to the enemy and slower speeds make RW reconnaissance valuable in an ISR role.¹² However, in today's era of streaming video and real-time data burst to a remotely located command post, RW are very limited. Currently, no USMC RW asset can send a live video feed to a command post or a ground unit.¹³ This lack of technology makes many ground commanders reluctant to employ RW fires because they cannot see what is being targeted. As shown in the Predator killing civilian's example, the negative fallout from not being closely integrated can have disastrous results.

Current COIN operations in Operation Iraqi Freedom (OIF) have seen very little employment of kinetic fires in the last year.¹⁴ Most air assets are supporting the ground scheme with ISR.¹⁵ Perhaps the greatest forces available to the JFC for ISR are unmanned aerial systems (UAS). These can provide long range, long on-station time, and sensors designed for the location and tracking of small units or people. The sensors on UASs are also designed to be viewed remotely, making them ideally suited for a ground commander to view the UAS's ISR in real time and make decisions based on the information presented. However, UASs are hampered by their limited kinetic load out, are few in number, and are severely hampered by the elements. The desert environment may be an ideal location for them, but wind, rain, and clouds dramatically hamper a UAS's performance. Due to the small numbers currently in the U.S. inventory, the training opportunities are few, making it

difficult for ground units to develop close ties or techniques, tactics, and procedures (TTPs) for upcoming operations.

Traditional FW fighter assets, such as F-16s and FA-18s, can help bridge the gap as an air asset that is not as hampered by the weather, provides video feed for ISR, and brings a mix of weapons to the JFC. FW can also operate in areas where many RW platforms cannot, such as the extreme mountainous areas in Afghanistan. Most FW are limited by their short on-station time, and for long missions require a tremendous amount of airborne tanker support. Additionally, even though FW can travel longer distances and support many ground units across a large area, there comes a point where a FW aircrew can no longer maintain situational awareness to the areas they may support on a given day. There may be a wave-top type of knowledge as to general schemes, but the detailed insight gained from working the same AO with the same ground unit is difficult. On-station times for FW are generally much less than those of RW or UAS's.¹⁶

Knowing the strengths and weaknesses of the types of air forces available to the JFC, the best type would be a mix made up primarily of RW, with FW and UAS assets. This mix of forces would give the JFC the option of mixing and matching his assets to what is best suited to the mission. 1st Battalion 3rd Marines, in its after-action report, stated, "The battalion was most successful when it could incorporate mortars, artillery, close air support (CAS), and Predator UAV assets to enhance the combat capabilities of the companies in pursuit of the enemy."¹⁷ This highlights the value of combined arms, not only from ground fires but combining air assets as well. Although all of these assets are available in theater they are parceled out and rarely brought together to maximize strengths and minimize the weaknesses of each platform.

The key in making these forces effective would be to have them all train together prior to conducting the operation. If COIN operations need to be supported immediately then the next best option is to have the entire JFCs component headquarters co-located with the ground forces. Being co-located allows the air units to interface directly with the forces they are supporting. To be effective the planning for COIN operations must be done side by side.

A more effective relationship between the ground and air forces can develop over time, if the forces are paired together. The 4th Brigade Combat Teams' (BCT) OIF 06-08 lessons learned stated, "The air cell's air-to-ground integration improved and, consequently, the air-to-ground integration became the most effective combat tactic for company (-) operations."¹⁸ This lessons learned highlights that although prior to deployment close integrated training was not possible, the tactical operations became more effective over time due to a close working relationship.

This same model can be adopted by the JFC for his air operations in COIN operations, particularly when establishing his command organization. The USMC Small Wars Manual states that the air commander for COIN must "maintain frequent contact with the Force Commander and his staff."¹⁹ Although the Small Wars Manual never envisioned SIPR (secret internet protocol) and VTC's (video teleconferences), the rule remains the same. More importantly is the type of contact. When an air staff and ground staff work side by side a greater unity of effort is achieved. The German Luftwaffe moved its headquarters next to General Manstein's during the Crimean campaign when the Germans were about to begin the offensive to remove recently arrived Soviet troops on the Kerch Peninsula.²⁰ By working side by side, and not via distances, the staffs were able to achieve a unity of effort not yet seen during that campaign.

The current model of the CAOC is to have liaison officers from the Army and Marines working at the CAOC. In theory these liaison officers are supposed to convey the needs of the ground units. This set-up is backwards and counter-intuitive to the best way of supporting the ground forces. The end result of today's set-up is that the CAOC decides which air assets it will send to support the ground scheme and for which missions. Should a current JFC wish to have air assets shifted around, or have the need for more sorties, the JFC has to request permission from the CAOC. The supported commander in a COIN should never have to request permission from any supporting unit what his needs and desires are.

The JFC should ensure his CAOC is co-located with his own headquarters or at the very least be integrated directly with the land component commander. The JFC, by having his staffs co-located can achieve a unity of effort and unity of command that will align the air operations to the ground effort more effectively. The focus of effort in a COIN is the operations conducted by the ground forces. The JFC, by having his air component staff close, can ensure his needs are being met. The future JFC needs to think of his future air staff as a CFACC: Combined Forces Air Component *Coordinator*, vice CFAC-commander. This last word is the key in establishing the relationship between supported and supporting among the aligned staffs. There is only one overall commander during the operation, the JFC. All other functions beneath him are supporting efforts designed to coordinate support for the ground scheme of maneuver. For OIF and OEF the CFACC reports directly to CENTCOM. This causes command organization friction in terms of who is supporting whom.²¹ It is also a clear violation of the US Air Force's doctrinal axiom, "all airmen work for airmen, and the senior airman works for the JFC."²²

Factor Space: Creating Flexibility

COIN operations typically occur in an area where individual ground units' missions are being carried out simultaneously. In OIF and OEF there is no traditional forward line of troops to concentrate forces against. Instead an entire AO is being engaged by multiple forces simultaneously, and different portions of the ROMO. One unit in the AO may be establishing a new police force, while another is conducting a strike against a high value target. These missions may be on opposite ends of the ROMO from one another, but given the dynamic nature of COIN they are probably happening in the same town. A JFC will have his ground forces pushed out into the AO to be as effective and responsive as possible during COIN operations, and the same needs to be true for the air operations that support him.

RW aviation gives the JFC flexibility and mobility in terms of assault support that the insurgents will probably not enjoy. To fully exploit the advantage of being able to maneuver forces across an AO takes a good deal of operational planning. RW aviation is hampered by its slow speeds and relatively short range. In order to mitigate this weakness, the JFC will need to establish Forward Operating Bases (FOB) and Forward Arming and Refueling Points (FARP). With well placed FOBs and FARPs the JFC can extend his lines of operations and have an operational reach throughout his area of operations.

Depending upon the scope of the COIN the JFC will have one or more major bases inside of his AO. This type of theater geometry lends itself to having interior lines of communication; all aviation assets flow out from one or two central locations. Although the JFCs combat power is consolidated and it is easy to coordinate efforts extending from one base, it has the drawback of being predictable. If air power is needed far from the base of operations coordination is harder and the effects desired may arrive too late. FOBs and

FARPs can help the JFC increase his lines of operations in terms of numbers, flexibility, and the ability to bring air power to bear. Placed throughout an AO the lines of operations can now create a network from interior lines of operations, to exterior lines, with reference to the enemy. An enemy force in a COIN will shift its location and focus of effort as COIN operations progress. By having his air assets pushed out into the AO, the JFC can now concentrate his forces from multiple lines achieving mass in terms of his forces being in the right place and time.

FOBs and FARPs allow the JFC a logistical freedom, more options for movement and maneuver, and increased tempo during COIN operations. In OEF the mountainous terrain restricts the movement of many ground vehicles, and creates access challenges for ground forces. RW assault support can overcome terrain restrictions that would otherwise preclude the movement of ground forces. Aviation can also bypass enemy action. During OIF in 2004-2005 aviation from RW and FW were used in greater numbers for re-supply in order to bypass roads that had become too risky for large convoys due to improved explosive devices (IED).²³ The same was true for the 4th BCT during their OIF 06-08 deployment: “Air assaults were successful because they allowed ground forces to avoid IEDs and explosively formed penetrators during infiltration and extraction.”²⁴

FOBs and FARPs are not restricted to just RW aviation. FW aircraft can utilize FOBs to great advantage. Fighter sized FW are restricted by their on station time. Although FW can cover great distances it is at a cost of longer on station times once they arrive to begin support. By establishing a FOB a JFC can have his FW transit a long distance, then re-fuel at a FOB to maximize the support given in a portion of the AO. A FOB for FW can free up tanker assets if they are not available. This was the case recently when VMFA-122 utilized

FOBs to extend their reach in case of dropped tanker support.²⁵ The FOBs were also used to further communications for air operations occurring well beyond the radio range of the main DASC (Direct Air Support Center). A FOB used in this manner now serves as a key communication node furthering the reach of the command and control structure.

The JFC must also divide his AO into different sectors with dedicated air units or dedicated sorties devoted to those sectors. The JFC can assign units directly to ground units. However, the scope of operations and number of air assets available may preclude this from happening. By having air assets cover the same sector for a long period of time they become familiar with the territory, the units working there, and the day to day situational awareness of what the ground forces are doing. Instead of the current kill-box airspace assignment, the JFC will establish air sectors that mirror the area of responsibility for a particular ground unit. Assigning air units to a particular area for an extended period of time also builds positive relationships with the ground forces. One air officer's comments from OIF were, "The big difference was that our Marine air was more effective. Why? The pilots flew in our AO every day and knew all of the FACs/JTACs. They were also read into the details of a specific operation because they helped plan it."²⁶

Factor Time: Where Changes in Force and Space Make an Impact

The operational design preparations the JFC makes in the factors force and space will create the benefits against the factor of time. Milan Vego, in his magnum opus *Joint Operational Warfare*, states, "Mastering the factor of time in combat essentially means acting faster than the opponent. Then the key to success is to shorten the time for estimating the situation, making a decision, and deploying and maneuvering one's combat forces."²⁷ A JFC when assigned an AO for a COIN is working against the clock, even more so than in a

conventional operation. If a COIN operations' success truly depends upon winning the population, as Galula stated, then the enemy has an advantage.²⁸ The enemy is working on familiar ground with a history already established with the local populace. The conduct of the enemy may be negative towards the populace, but it may have a substantial foothold. The JFC will have to conduct his operations reactively to the situation already established by the enemy insurgency.

When an insurgent force strikes, it is usually at a place, time, and with the force of his choosing. When responding to a TIC the JFC is working at a time disadvantage. The effectiveness of a COIN counter-strike is wholly dependent upon how fast forces can be mustered. In some circumstances the COIN forces on the ground are enough to deal with the threat, but with the inherent confusion of an ambush, and the difficulty of operating in an urban environment, it is aviation which can turn the tide. In OIF and OEF the enemy utilizes the advantage of urban terrain and knowledge of the area to use hit and run tactics. The attacks do not normally last longer than seven to ten minutes.²⁹

Even though the attacks and forces used are at a tactical level the JFC can have a dramatic impact on the outcome by establishing the right operational factors to ensure success. Given that the length of engagements are less than ten minutes, the JFC needs to minimize the time of aircraft transit, time to familiarize an on-coming aircraft to a situation, and then set up the attack. Well positioned FOBs can reduce the transit time for aircraft responding to a TIC. By assigning air units to a certain sector of the AO the JFC can help set the conditions for rapid tactical employment. A familiarity with the area can help shorten the process of gaining situational awareness once an aircraft is on station. A Marine air officer in OIF stated, "If I, as a FAC/JTAC, had to delay 10 to 15 minutes to wait for Marine air, I

would do it. Why? Because the time you need to spin up the CFACC crew will take that long at a minimum.”³⁰

Many situations in a COIN will not entail kinetic fires, but will still require the need for quick action. The emphasis for most situations will be on the second portion of Vego’s definition entailing the assessment of a situation, making a decision, and then employing ones combat forces. ISR will be a major task for any aviation asset.³¹ Some of this ISR will be pre-planned, while often it will be put into position after actionable intelligence is received. Some aviation assets can act upon what they are seeing. For example, a Predator UAS may observe individuals digging on the side of the road which could solve theaters rules of engagement (ROE) for hostile intent. The UAS might then be able to employ ordnance. However, the UAS only sees what is inside of its narrow field of view. It may not see the friendly forces adjacent to where the digging is occurring. The UAS operator may not know that people in that area routinely dig small wells for irrigation and water near road drainage points. A mix of aviation assets familiar with the area will mitigate the potential for striking a wrong target.

The JFC is concerned with such a tactical strike, but is more concerned with building and acting upon his operational intelligence. For example, there may be a large group of individuals gathering in a remote location. This situation could be establishing the beginning of a pattern of enemy dispersment of weapons.³² The JFC can both observe and follow each individual, but assets available would probably make this an unlikely option. The JFC may wish to intercept the group, or set up roadblocks to quickly cordon off a section of his AO. An aviation option could be the aeroscout mission as used successfully by the Marines in Al Anbar.³³ This type of mission is tactical in nature, but is controlled at an operational level for

operational and potentially strategic effects. The effectiveness of such close integration of planning and execution of aeroscout was echoed in a recent USAF and Marine Corps trip report; “The highly successful “aero-scout” missions and raids are examples of this type of planning and integration.”³⁴

A final operational measure the JFC can institute for his air component is what type of command and control will be in place. The quickest method of getting aviation pushed to the ground forces in need is procedural control. There are several benefits to this. First, it requires a much smaller footprint of logistics for a command organization. The radars required for positive control are large, expensive to maintain, and take time to set-up. In a post OIF interview MSgt Simmons, a Marine Aviation Command and Control Marine, stated, “I don’t care what the book says; it’s going to take 3 days to get that gear up and running.”³⁵ The JFC may not have 3 days to wait for a command and control structure to be up and running. He may also not have the capacity to support large land based radars. Procedural control is a more effective means of managing the JFC’s air space quickly and effectively.

Procedural control is designed to push aircraft down to the user quickly. Positive control has a series of command approval layers built into it. In OIF the CAOC routinely used up aircrafts’ on station time, while waiting for guidance on tasking.³⁶ In the MEF AOR during the opening phases of OIF and during Fallujah, using procedural control, the DASC, quickly pushed aircraft down to whoever needed it.³⁷

Counter Argument: The Wheel Is Already Round

A counter-argument to having a unique set-up for air operations in COIN is that air power would be parceled out into smaller and smaller numbers. Massing firepower and

having a very centralized control structure is the best way to maximize the full effects of air power in MCO. However, COIN operations do not need large formations or planning that occurs removed from the JFCs AO. Air operations in a COIN require a small force capable of being deployed rapidly. They require a detailed level of integration for them to be the most successful. Furthermore, having air assets rigidly controlled by an air commander is counter to who is being supported; the ground commander. In no place in the U.S. Air Force's recently published doctrine on irregular warfare does it ever elude to the fact that air power is a supporting arm.³⁸

Proponents of keeping the same system in place point to Fallujah in 2004, where the COAC and MEF worked their differences out seamlessly. The reality is that there were two separate systems working independently of one another. The MEF used detailed planning, close integration, and procedural control to conduct a ten battalion sweep of the city with zero air to ground fratricides.³⁹ Two separate systems, designed for different uses is not the most effective way to utilize scarce aviation assets. A single flexible system, designed to support the ground scheme, much like the MAGTF (Marine Air Ground Task Force) employs, should be the basis for the future JFC.

Conclusion: Operational Considerations Bringing Tactical Success

The changes mentioned in this paper are not new ideas. They stem from lessons learned by the Marine Corps eighty years ago. The JFC, when establishing his aviation forces will have many options in terms of force, space, and time. To utilize his air power most effectively he will need to have a mix of forces with forward deploying capability. The

ground scheme of maneuver in COIN operations is the supported element. All other combat and service support elements are supporting. By creating a command organization and having staffs co-located the JFC can ensure a greater unity of command and effort. The JFC will need to tie his aviation units as closely to the ground forces through a combination of FOBs, airspace measures, and training. Although his aviation assets may be used only in tactical scenarios, by establishing the right operational design, the JFC can assure that his air power can support the ground combat element and be brought to bear each and every time it is called upon.

Recommendations

There are changes which could be implemented by the current COIN operations in OIF and OEF. At a minimum the CAOC needs to be brought back under the organizational control of the JFC in OEF, especially as operations in Iraq wind down and the August 2011 withdraw date draws closer. The AFMCTT highlighted that air assets need to be pushed down to the lowest level, but moving the CFACC under the respective JFCs would be the first step.⁴⁰ The next step would be reversing the trend of LNOs assigned to the CAOC. The majority of liaison needs to occur with the CAOC asking what support is required in a proactive manner by being imbedded with the ground units they support, not a handful of ground LNO's asking for assets. Finally, the current JFCs can establish more FOBs to push aviation out to where it is needed the most; in the field with the ground combat element. The USMC is looking to aggressively place FOBs throughout their soon to be assigned AO in Afghanistan, but it will only be one small portion of the overall effort.⁴¹

The issues and solutions presented in this paper are intended for future COIN operations, where a JFC is unencumbered by a system already in place. The greatest step in

ensuring that the supporting air arm works closely for the ground combat element in COIN operations is to train those units together. If a JFC has the luxury of time, then he should link up both the air and ground units as soon as possible, and prior to deployment. If the units are not collocated or nearby in the United States, then frequent exercises and planning drills are the next best thing. If the JFC does not have the time to train his forces pre-deployment, then linking the two together once in theater will prove to be the most useful. Numerous lessons learned have proven this. A heavy RW force, with UAS as the next priority, followed by FW is the best force mixture available to a JFC during COIN operations. Having the right players in place, who are tied closely to the ground combat element through training and doctrine, will ensure the aviation element proves its “usefulness in assisting the troops on the ground to successfully carry out their missions.”⁴²

Notes

¹ Edward C. Johnson, *Marine Corps Aviation; The Early Years 1912-1940*, (Washington, DC: History and Museums Division, USMC, 1971), 27.

² Thomas E. Ricks, *Fiasco; The American Military Adventure in Iraq* (New York, NY: Penguin Group, 2007), 264-267.

³ United States Marine Corps, *Small Wars Manual*, (Washington, DC; GPO, 1940), 336, <https://www.doctrine.quantico.usmc.mil/> (accessed 16 February 2009).

⁴ Air Force and Marine Corps Tiger Team, *Trip Report* (Washington DC, General Officer Steering Committee, 2008), 3. For Official Use Only.

⁵ Ibid, p 6.

⁶ Michael L. Downs, "Rethinking the Combined force Air Component Commander's Intelligence, Surveillance, and Reconnaissance Approach to Counterinsurgency," *Air & Space Journal* 22, No. 3 (Fall 2008): 67.

⁷ David Galula, *Counterinsurgency Warfare: Theory and Practice*, (New York, NY: Praeger Securities International, 2006), 95.

⁸ P.W. Singer, *Wired For War* (New York, NY: Penguin Press, 2009), 397.

⁹ United States Marine Corps, *Small Wars Manual* (Washington, DC; GPO, 1940), 335. <https://www.doctrine.quantico.usmc.mil/> (accessed 16 February 2009).

¹⁰ Author was a forward air controller (FAC) for BLT 1/2 from January 2004-April 2005 and during the battalions tour in the Sunni triangle preferred Marine Cobra's and Huey's over any other asset due to the factors listed above. When working with Army units, they preferred their own RW for the same reasons.

¹¹ Major Samuel Deputy (former MAWTS-1 instructor), interview by the author, 17 April 2009. The proliferation of small arms and MANPADS makes the urban setting a medium to high threat area for RW aircraft.

¹² David F. Samuel, "Making Better Use of Aviation Assets," *Marine Corps Gazette* 91, No. 5 (May 2007): 17.

¹³ Systems are coming online, but like all good programs it requires money and testing, both of which may not be great supply in the near-term. By 2011 all Camp Pendleton based UH-1s will have transitioned to the UH-1Y which will have the capability to send a live feed to a ground station, but these RW aircraft only make up a very small percentage of the total force.

¹⁴ Major Nicholas Neimer (VMFA-122 Operations Officer), interview by the author, 19 April 2009. VMFA-122 dropped zero times during their August 2008-February 2009 deployment.

¹⁵ For the sake of argument the author chooses to call it ISR. The Air Force has tried to change this to various sub-names; Over-watch, armed-recee, etc.

¹⁶ RW can stay on station for at least 1.5 hours, and a Predator UAS can be overhead up to 12 hours. A typical FW overhead time is one hour.

¹⁷ Marine Corps Center for Lessons Learned, *Distributed Operations in Afghanistan; 1st Battalion 3rd Marines*, (Quantico, VA; MCCLL, 2006), 11. <https://www.mccll.usmc.mil>. (Accessed 09 April 2009)

¹⁸ Melissa A. Viator, "Spartan Air Cell Lessons Learned" *Fires*, January-February 2008, http://sill-www.army.mil/firesbulletin/2008/jan_feb_2008/Jan_Feb_2008_pages_19_21.pdf. (Accessed 10 April 2009)

¹⁹ United States Marine Corps, *Small Wars Manual*, (Washington, DC, GPO, 1940) 333. <https://www.doctrine.quantico.usmc.mil/> (accessed 16 February 2009).

²⁰ Joel Hayward, "Case Study in Early Joint Warfare: An Analysis of the Wermacht's Crimean Campaign of 1942," *Journal of Strategic Studies* 22, no 4 (December 1999): 118.

²¹ Air Force and Marine Corps Tiger Team, *Trip Report* (Washington DC, General Officer Steering Committee, 2008), 9. For Official Use Only.

²² U.S. Air Force, *Air Force Basic Doctrine*, Air Force Doctrine Document (AFDD) 1 (Washington, DC: Department of the Air Force, 17 November 2003), x.

²³ The author was a recipient of these efforts. During the summer and fall of 2004 route Tampa, the main supply route to Baghdad from Kuwait became almost untenable, due to attacks. The Air Force and USMC increased their C-130 flights for the specific purpose of overflying the ambush prone route.

²⁴ Melissa A. Viator, "Spartan Air Cell Lessons Learned" *Fires*, January-February 2008, http://sill-www.army.mil/firesbulletin/2008/jan_feb_2008/Jan_Feb_2008_pages_19_21.pdf. (Accessed 10 April 2009).

²⁵ Major Neimer (Operations Officer VMFA-122), interview by the author, 19 April 2009.

²⁶ Charles Bagnato, "Airpower in a Small War," *Marine Corps Gazette* 92, No. 9 (Sep 2008): 65.

²⁷ Milan Vego, *Joint Operational Warfare* (Newport, RI; US Navy War College, 2007), III-19.

²⁸ David Galula, *Counterinsurgency Warfare: Theory and Practice* (New York, NY: Praeger Securities International, 2006), 95.

²⁹ Marine Corps Center for Lessons Learned, *Marine Air Command and Control System in Iraq* (Quantico, VA; MCCLL, 2008), 28 . <https://www.mccll.usmc.mil>. (Accessed 09 April 2009)
The author can also attest to this. The longest engagement during his eight month deployment was 12 minutes, when the enemy staged a large attack against a company sized movement.

³⁰ Charles Bagnato, "Airpower in a Small War," *Marine Corps Gazette* 92, No. 9 (Sep 2008): 65.

³¹ Gary L. Burd, "Asymmetric Air Support," *Air & Space Power Journal* 22, no. 4(Winter 2008): 34.

³² Milan Vego, *Joint Operational Warfare* (Newport, RI; US Naval War College, 2007), VIII-28. Vego is discussing when utilizing operational intelligence the JFC is looking for more than a onetime strike. The JFC needs to have the assets available to build his intelligence picture for future operations. A pattern of enemy behavior is one way this occurs.

³³ Aeroscout was a mission of an on call airborne insertion force via RW. Larger packages contained every type of aviation asset; RW, FW, and UAS. The purpose was to quickly move a ground force via air to seal off an area, search suspect vehicles, or capture HVTs. The missions were quick in nature, usually not lasting more than a few hours, and then the ground force would be extracted. The minimal ground footprint was seen as a positive when trying to minimize a perceived overbearing presence in some areas.

³⁴ Air Force and Marine Corps Tiger Team, *Trip Report* (Washington DC, General Officer Steering Committee, 2008), 5. For Official Use Only.

³⁵ Marine Corps Center for Lessons Learned, *Marine Air Command and Control System in Iraq* (Quantico, VA; MCCLL, 2008), 28. <https://www.mccll.usmc.mil>. (Accessed 09 April 2009) The MSgt is speaking of the TPS-59.

³⁶ Fred H. Allison, "Close Air Support; A Core Contributor to the Successful Integrated Operations in Fallujah," *Marine Corps Gazette* 92, No. 10 (Oct 2008): 72.

³⁷ Charles Bagnato, "Airpower in a Small War," *Marine Corps Gazette* 92, No. 9 (Sep 2008): 64.

³⁸ U.S. Air Force, *Irregular Warfare*, Air Force Doctrine Document (AFDD) 2-3 (Washington, DC: Department of the Air Force, 1 August 2007), 1-103.

³⁹ Fred H. Allison, "Close Air Support; A Core Contributor to the Successful Integrated Operations in Fallujah," *Marine Corps Gazette* 92, No. 10 (Oct 2008): 70.

⁴⁰ Air Force and Marine Corps Tiger Team, *Trip Report* (Washington DC, General Officer Steering Committee, 2008), 5-10. For Official Use Only.

⁴¹ Brigadier General Ronald C. Johnson, Deputy Director of Plans and Policy, United States Marine Corps (address, Marine students, U.S. Naval War College, Newport, RI, 20 April 2009).

⁴² Edward C. Johnson, *Marine Corps Aviation; The Early Years 1912-1940*, (Washington, DC: History and Museums Division, USMC, 1971), 27.

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